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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/833,238	04/10/2001	Edwin Dair	003918.P002XX7	2786

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EXAMINER

BELLO, AGUSTIN

ART UNIT PAPER NUMBER

2633

DATE MAILED: 12/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/833,238

Applicant(s)

DAIR ET AL.

Examiner

Agustin Bello

Art Unit

2633

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-73 is/are pending in the application.
- 4a) Of the above claim(s) 10-17, 38-50 and 61-70 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 18-37, 51-60 and 71-73 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>6/2/04, 5/17/04</u> . | 6) <input checked="" type="checkbox"/> Other: <u>IDS 5/22/01</u> . |

DETAILED ACTION

Election/Restrictions

1. Claims 10-17, 38-50, and 61-70 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 9/20/04. ✓

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-9, 18-37, 51-60, and 71-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schwab (U.S. Patent No. 4,432,604).

Regarding claims 1, 22, 32, and 51, Schwab teaches a fiber optic module for coupling photons between optoelectronic devices and optical fibers, the fiber optic module comprising: a base (e.g. "frame" not shown but described in column 2 lines 20-25); a back plane (reference numeral 60 in Figure 1) including a horizontal and vertical array of edge connectors (reference numeral 36, 38 in Figure 1) and a connector to couple to a host system (e.g. "pins" not shown but described in column 2 lines 20-25); a horizontal and vertical array of printed circuit boards (reference numeral 12, 14 in Figure 1) each having an edge connector (reference numeral 34 in Figure 1) and an optoelectronic device (column 2 lines 16-19 and inherently in reference numeral 20 in Figure 1) coupled thereto in parallel to the optical axis of the optoelectronic device, the

Art Unit: 2633

horizontal and vertical array of printed circuit boards each having its respective edge connector coupled to the respective horizontal and vertical array of edge connectors of the back plane (inherent in Figure 1). Schwab differs from the claimed invention in that Schwab fails to specifically teach a shielded housing coupled to the base to encase the plurality of printed circuit boards to reduce electromagnetic interference (EMI).

However, one skilled in the art would clearly have recognized that the “frame” of Schwab (column 2 lines 20-25) would more than likely have acted as a shielded housing by encasing the plurality of printed circuit boards. One skilled in the art would have been motivated to encase the plurality of printed circuit boards in this manner in order to eliminate or reduce EMI. Those skilled in the art clearly recognized the detrimental effects of EMI and typically try to prevent interference from electromagnetic waves.

Furthermore, Schwab provides a suggestion for such an encasement in the description of a “frame” (column 2 lines 20-25). Moreover, frames encasing a printed circuit boards for the purpose of eliminating EMI are very well known in the art. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to encase the plurality of printed circuit boards to reduce electromagnetic interference (EMI).

Regarding claims 2, 23, 29, and 52, Schwab teaches an optical block (reference numeral 100 in Figure 3) coupled to each of the optoelectronic devices of the horizontal and vertical array of printed circuit boards, the optical block having a horizontal and vertical array of openings (reference numeral 106, 108 in Figure 1) to receive each of the optoelectronic devices of the horizontal and vertical array of printed circuit boards, and a horizontal and vertical array of lenses (inherent in elements 25, 29 in Figure 1) to couple photons between each of the optoelectronic devices of the horizontal and vertical array of

Art Unit: 2633

printed circuit boards and a plurality of optical fibers (reference numeral 22, 28, 42, 44 in Figure 1) respectively.

Regarding claims 3, 24, 30, and 53, Schwab teaches a nose (reference numeral 26, 32 in Figure 3) to receive an optical fiber connector (reference numeral 24, 30 in Figure 3) and to hold the plurality of optical fibers substantially fixed and aligned with the horizontal and vertical array of openings of the optical block.

Regarding claims 4, 25, 31, and 54, Schwab teaches a nose shield (reference numeral 100 in Figure 3) surrounding the nose to reduce electromagnetic interference.

Regarding claims 5, 26, and 55, Schwab teaches that the back plane includes traces (as seen in Figure 1) between the horizontal and vertical array of edge connectors (reference numeral 36, 38 in Figure 1) and the host connector (e.g. "pins" not shown but described in column 2 lines 20-25).

Regarding claims 6, 19, 20, 27, and 56, Schwab teaches that the connector is a plurality of pins (e.g. "pins" not shown but described in column 2 lines 20-25).

Regarding claims 7, 28, and 57, Schwab teaches that the connector is an electrical connector including a plurality of pins (e.g. "pins" not shown but described in column 2 lines 20-25).

Regarding claim 8 and 58, Schwab teaches that the horizontal and vertical array of printed circuit boards is a horizontal and vertical array of vertical printed circuit boards (reference numeral 12, 14 in Figure 1).

Regarding claims 9, 37, 59, and 60, Schwab teaches that the horizontal and vertical array of vertical circuit boards (reference numeral 12, 14 in Figure 1) are each arranged perpendicular to printed the base (inherent in the "frame" as discussed in claim

Art Unit: 2633

1) and parallel to each other to form a horizontal and vertical array of fiber optical channels (as seen in Figure 1).

Regarding claims 18, 33, and 71, Schwab teaches that each of the printed circuit boards includes a ground plane on one side (inherent in the printed circuit boards 12, 14 in Figure 1).

Regarding claims 21, 34-36, and 73, Schwab differs from the claimed invention in that Schwab fails to specifically teach that some optoelectronic devices of the horizontal and vertical array of printed circuit boards are coupled thereto using a through hole mount configuration; and other optoelectronic devices of the horizontal and vertical array of printed circuit boards are coupled thereto using a straddle mount configuration. However, both coupling configuration are very well known in the art. One skilled in the art would have been motivated to employ either of the coupling configurations in order to meet design requirements or based on the type of optoelectronic devices on hand. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to employ either of the coupling configurations claimed.

Regarding claim 72, Schwab teaches that each of the edge connectors of the printed circuit boards includes one or more staggered pads (reference numeral 34 in Figure 1) to plug in the printed circuit board when the fiber optic module is hot.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Weir, Nicolici, and Kaspari teach relevant art.

Art Unit: 2633

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Agustin Bello
Examiner
Art Unit 2633

A handwritten signature in black ink, appearing to read 'A. Bello', is written over the printed name and title.

AB